

What is claimed is:

1. A component of a vacuum deposition apparatus,
comprising:

a component body; and

5 a spray deposit coated on a surface of the component body
and having surface roughness in which a mean spacing S of tops
of local peak of profile, and distances from a mean line to a bottom
of profile valley line R_v and to a top of profile peak line R_p ,
all of which are stipulated by JIS B 0601-1994, are in the ranges
10 from 50 to 150 μm , from 20 to 70 μm and from 20 to 70 μm ,
respectively.

2. The component as set forth in claim 1:

wherein the spray deposit comprises a coat comprising metal
of which thermal expansion coefficient is different by $15 \times 10^{-6}/\text{K}$
15 or less from that of a material deposited by the vacuum deposition
apparatus.

3. The component as set forth in claim 1:

wherein the spray deposit comprises a coat comprising metal
of which thermal expansion coefficient is different by $20 \times 10^{-6}/\text{K}$
20 or less from that of the component body.

4. The component as set forth in claim 1:

wherein the spray deposit comprises a coat of two or more
layers of different materials.

5. The component as set forth in claim 4:

25 wherein the spray deposit comprises a stress relief layer
formed on the component body and comprising soft metal, and a
thermal expansion relief layer formed on the stress relief layer
and comprising metal of which thermal expansion coefficient is

different by $10 \times 10^{-6}/K$ or less from that of a material deposited by the vacuum deposition apparatus.

6. The component as set forth in claim 1:

wherein the spray deposit comprises at least one coat
5 selected from an Al base spray deposit of Vickers hardness of Hv 30 or less, a Cu base spray deposit of Vickers hardness of Hv 100 or less, a Ni base spray deposit of Vickers hardness of Hv 200 or less, a Ti base spray deposit of Vickers hardness of Hv 300 or less, a Mo base spray deposit of Vickers hardness of Hv 300 or less, and a W base spray deposit of Vickers hardness of Hv 500 or less.

7. The component as set forth in claim 1:

wherein the spray deposit has a thickness in the range from 50 to 500 μm .

15 8. A component of a vacuum deposition apparatus, comprising:

a component body; and

a spray deposit coated on a surface of the component body and having at least one low hardness coat selected from an Al base
20 spray deposit of Vickers hardness of Hv 30 or less, a Cu base spray deposit of Vickers hardness of Hv 100 or less, a Ni base spray deposit of Vickers hardness of Hv 200 or less, a Ti base spray deposit of Vickers hardness of Hv 300 or less, a Mo base spray deposit of Vickers hardness of Hv 300 or less, and a W base spray
25 deposit of Vickers hardness of Hv 500 or less.

9. The component as set forth in claim 8:

wherein the spray deposit comprises a thermal expansion relief layer comprising metal of which thermal expansion

coefficient is different by $15 \times 10^{-6}/K$ or less from that of a material deposited by the vacuum deposition apparatus, the thermal expansion relief layer being formed of the low hardness coat.

5 10. The component as set forth in claim 9:

wherein the thermal expansion relief layer comprises the metal of which thermal expansion coefficient is different by $20 \times 10^{-6}/K$ or less from that of the component body.

11. The component as set forth in claim 8:

10 wherein the spray deposit comprises a coat of two or more layers of different materials, at least one layer thereof comprising the low hardness coat.

12. The component as set forth in claim 8:

15 wherein the spray deposit comprises a stress relief layer formed on the component body and comprising soft metal, and a thermal expansion relief layer formed on the stress relief layer and comprising metal of which thermal expansion coefficient is different by $15 \times 10^{-6}/K$ or less from that of a material deposited by the vacuum deposition apparatus, at least one of the stress relief layer and the thermal expansion relief layer comprising 20 the low hardness coat.

13. The component as set forth in claim 12:

wherein all of the stress relief layer and the thermal expansion relief layer comprises the low hardness coat.

25 14. The component as set forth in claim 8:

wherein the spray deposit has a thickness in the range from 50 to 500 μm .

15. The component as set forth in claim 12:

wherein the stress relief layer has a thickness in the range from 100 to 300 μm , and the thermal expansion relief layer has a thickness in the range from 50 to 150 μm .

16. The component as set forth in claim 8:

5 wherein surface roughness of the outermost surface of the spray deposit is in the range from 5 to 15 μm in terms of an arithmetical mean roughness Ra provided by JIS B 0601-1994.

17. The component as set forth in claim 8:

wherein Vickers hardness of the low hardness coat denotes 10 an average value of five measurements of Vickers hardness that, after polishing the surface of the low hardness coat to make flat, are measured by forcing a diamond-pyramid indenter on the flattened surface under a weight of 200 g for 30 sec.

18. A vacuum deposition apparatus, comprising:

15 a vacuum chamber;

a sample holder holding a sample to be deposited and disposed in the vacuum chamber;

a deposition material source disposed in the vacuum chamber facing to the sample holder;

20 a source holder holding the deposition material source; and a preventive component disposed in the surroundings of the sample holder or the source holder;

wherein at least one selected from the sample holder, the source holder and the preventive component comprises the 25 component for a vacuum deposition apparatus set forth in claim 1.

19. The vacuum deposition apparatus as set forth in claim 18:

wherein the spray deposit formed on the surface of the component for a vacuum deposition apparatus comprises a coat containing at least one of metal forming the deposition material source.

5 20. The vacuum deposition apparatus as set forth in claim
18:

wherein the deposition apparatus is a sputtering apparatus.

21. A vacuum deposition apparatus, comprising:

a vacuum chamber;

10 a sample holder holding a sample to be deposited and disposed in the vacuum chamber;

a deposition material source disposed in the vacuum chamber facing to the sample holder;

a source holder holding the deposition material source; and

15 a preventive component disposed in the surroundings of the sample holder or the source holder;

wherein at least one selected from the sample holder, the source holder and the preventive component comprises the component for a vacuum deposition apparatus set forth in claim

20 8.

22. The vacuum deposition apparatus as set forth in claim
21:

wherein the spray deposit that the component for a vacuum deposition apparatus has comprises a coat containing at least one 25 of metal forming the deposition material source.

23. The vacuum deposition apparatus as set forth in claim
21:

wherein the deposition apparatus is a sputtering apparatus.

24. A target apparatus, comprising:
a target body; and
a spray deposit coated on a non-erosion area of the target
body and having surface roughness in which a mean spacing S of
5 tops of local peak of profile, distances to a bottom of profile
valley line R_v and to a top of profile peak line R_p , all of which
are provided by JIS B 0601-1994, are in the ranges from 50 to 150
 μm , from 20 to 70 μm and from 20 to 70 μm , respectively.

25. A target apparatus, comprising:
10 a target; and
a backing plate comprising a backing plate body holding the
target, and a spray deposit coated on a surface of the backing
plate body and having surface roughness in which a mean spacing
S of tops of local peak of profile, and distances to a bottom of
15 profile valley line R_v and to a top of profile peak line R_p , all
of which are provided by JIS B 0601-1994, are in the ranges from
50 to 150 μm , from 20 to 70 μm and from 20 to 70 μm , respectively.

26. A target apparatus, comprising:
a target body; and
20 a spray deposit coated on a non-erosion area of the target
body and having at least one low hardness coat selected from an
Al base spray deposit of Vickers hardness of Hv 30 or less, a Cu
base spray deposit of Vickers hardness of Hv 100 or less, a Ni
base spray deposit of Vickers hardness of Hv 200 or less, a Ti
25 base spray deposit of Vickers hardness of Hv 300 or less, a Mo
base spray deposit of Vickers hardness of Hv 300 or less and a
W base spray deposit of Vickers hardness of Hv 500 or less.

27. A target apparatus, comprising:

a target; and

a backing plate comprising a backing plate body holding the target, and a spray deposit coated on a surface of the backing plate body and having at least one low hardness coat selected from

- 5 an Al base spray deposit of Vickers hardness of Hv 30 or less,
- a Cu base spray deposit of Vickers hardness of Hv 100 or less,
- a Ni base spray deposit of Vickers hardness of Hv 200 or less,
- a Ti base spray deposit of Vickers hardness of Hv 300 or less,
- a Mo base spray deposit of Vickers hardness of Hv 300 or less and
- 10 a W base spray deposit of Vickers hardness of Hv 500 or less.